40 CFR 63 Subpart MMM
Pesticide Active Ingredient

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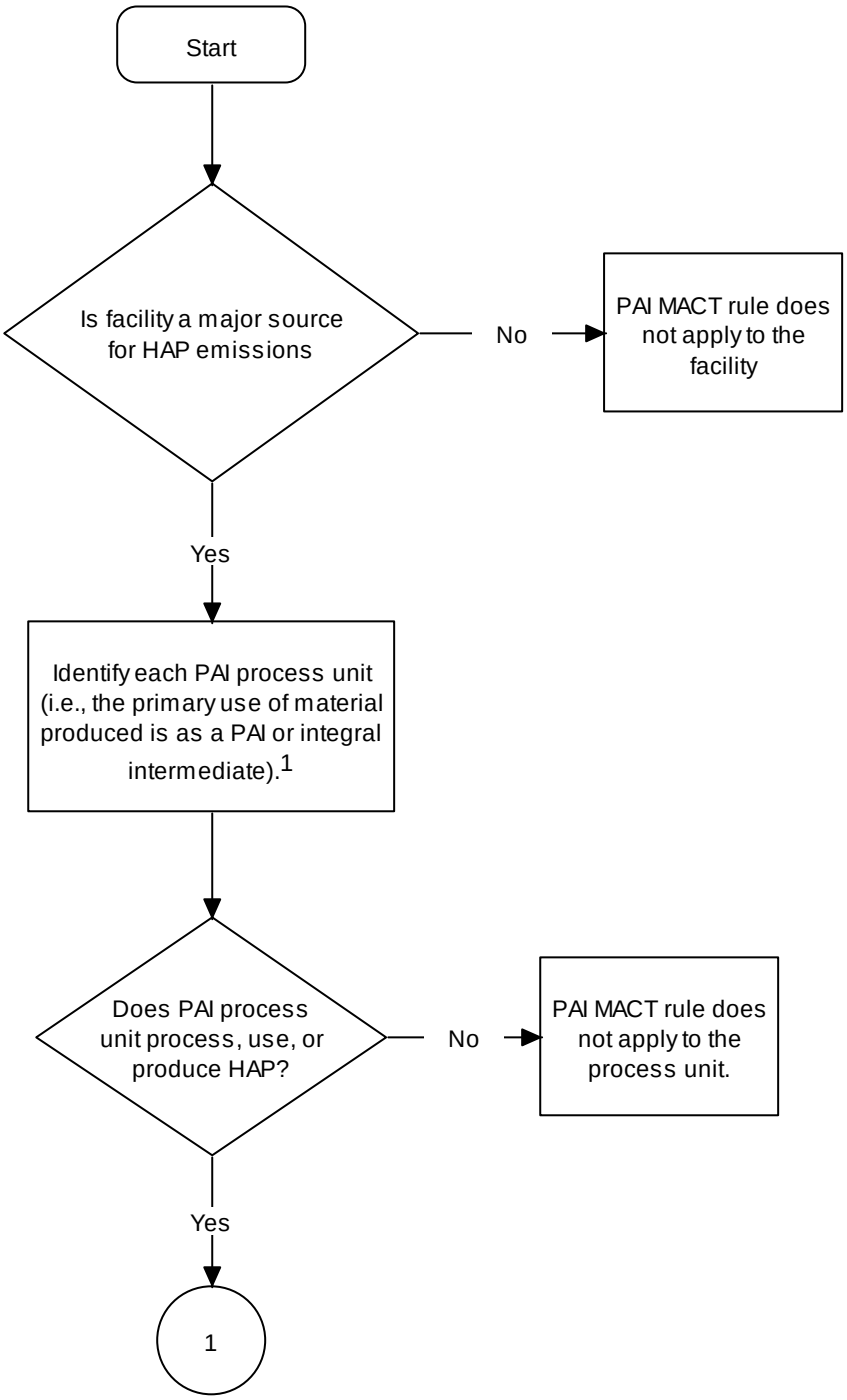
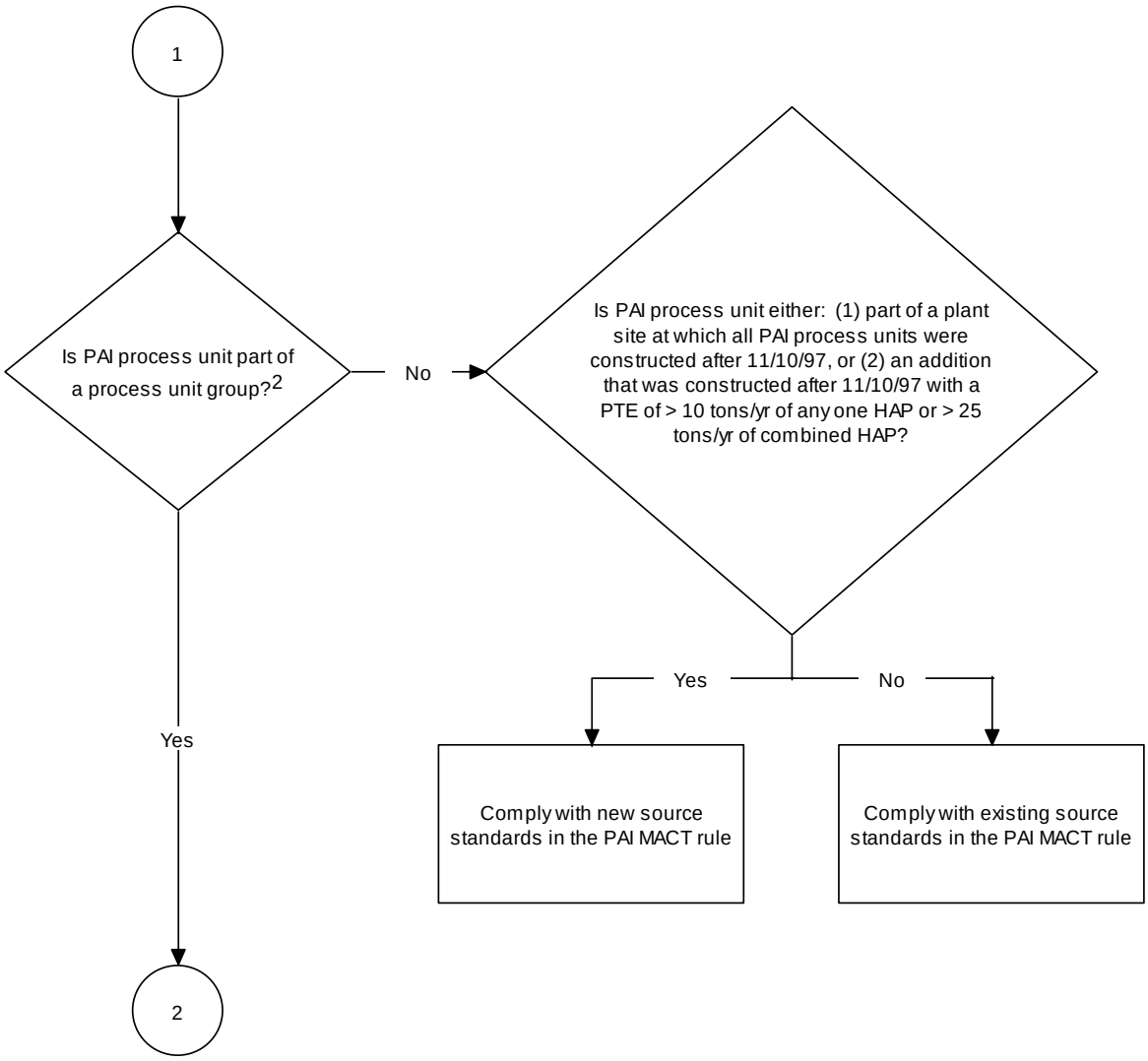
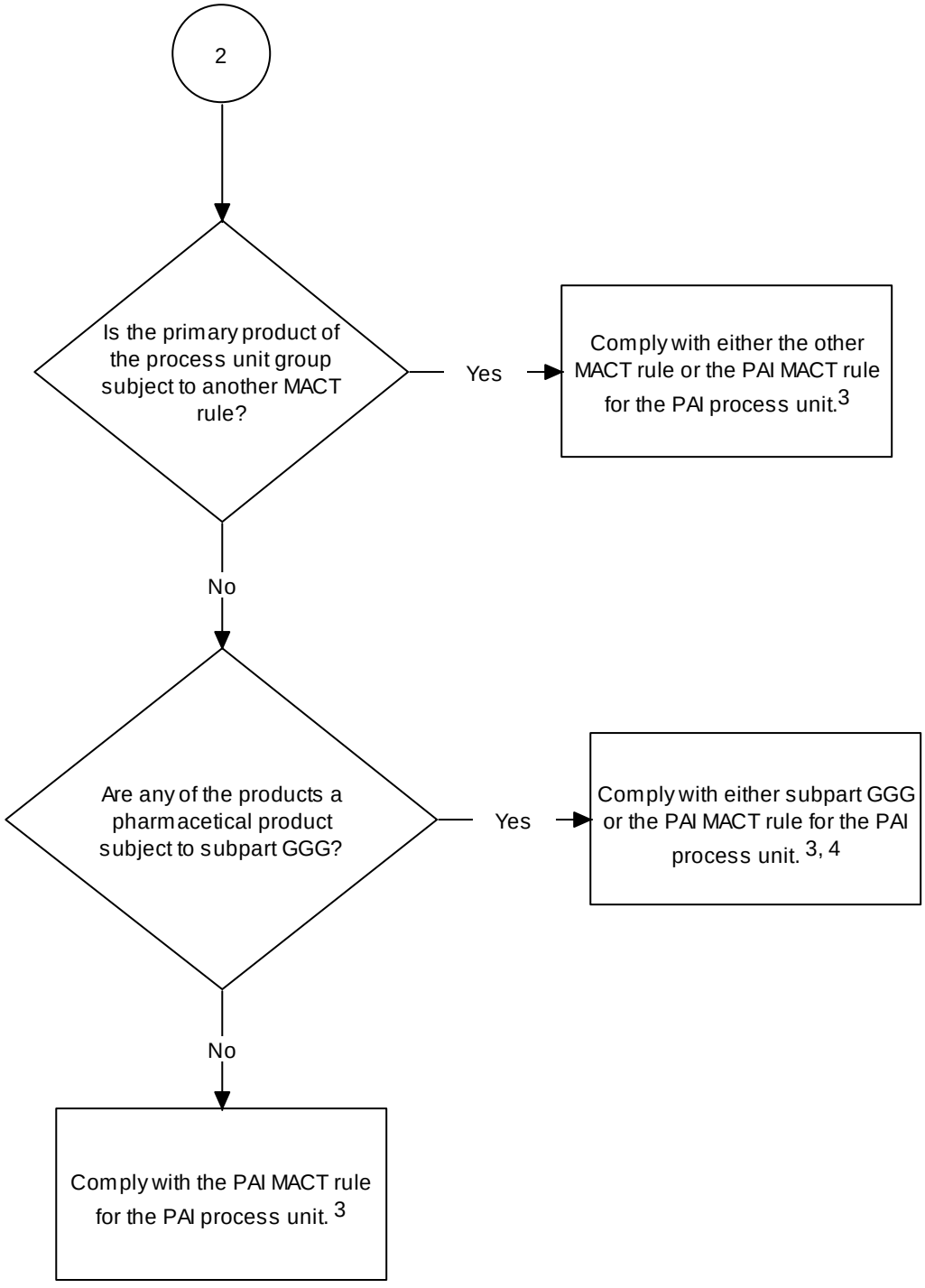
Applicability Flowchart




1
Is PAI process unit part of a process unit group?2
No
Is PAI process unit either: (1) part of a plant site at which all PAI process units were constructed after 11/10/97, or (2) an addition that was constructed after 11/10/97 with a PTE of > 10 tons/yr of any one HAP or > 25 tons/yr of combined HAP?
Yes
No
Yes
Comply with new source standards in the PAI MACT rule
Comply with existing source standards in the PAI MACT rule
2


2
Is the primary product of the process unit group subject to another MACT rule?
Yes
Comply with either the other MACT rule or the PAI MACT rule for the PAI process unit.3
No
Are any of the products a pharmacetical product subject to subpart GGG?
Yes
Comply with either subpart GGG or the PAI MACT rule for the PAI process unit. 3, 4
No
Comply with the PAI MACT rule for the PAI process unit. 3

1 A PAI is an active ingredient as defined in FIFRA and is used to produce as insecticide, herbicide, or fungicide pesticide end-use product. Note that the owner or operator may designate the production of some intermediates that are not integral intermediates as PAI process units.

2 A PAI process unit group is a group of process units that manufacture PAI's and products other than PAI's by alternating raw materials or operating conditions, or by reconfiguring process equipment.

3 Comply with new source standards if the process unit group is part of a plant site at which all PAI process units (and any associated process unit groups) were constructed after November 10, 1997. Otherwise, comply with existing source standards.

4 Some provisions in subpart GGG are not allowed for PAI process units.

Compliance Options for **Process Vents**

If you have a(n)..	And your process vents are…	Then, for..	Your compliance options are..[a]
existing source	Group 1 for organic HAP (> 0.15 Mg/yr/process)	each "large" vent[b]	• reduce organic HAP emissions by ≥ 98 percent [§63.1362(b)(2)(ii)] • reduce organic HAP emissions to ≤ 20 ppmv [§63.1362(b)(2)(iv)(A)] • use a flare that meets the requirements of §63.11(b) [§63.1362(b)(2)(iv)(B)] • use the alternative standard [§63.1362(b)(6)] • continue reducing HAP emissions by percentage achieved on or before 11/10/97, if that amount is > 90 percent [§63.1362(b)(2)(ii)(B)]
		any individual vent or any combination of vents, excluding large vents	• reduce organic HAP emissions to ≤ 20 ppmv [§63.1362(b)(2)(iv)(A)] • use a flare that meets the requirements of §63.11(b) [§63.1362(b)(2)(iv)(B)] • use the alternative standard [§63.1362(b)(6)]
		the collective emissions from all vents, excluding large vents, not controlled by [§63.1362(b)(2)(iv)(A)], [§63.1362(b)(2)(iv)(B)], or [§63.1362(b)(6)]	• reduce HAP emissions by ≥ 90 percent [§63.1362(b)(2)(ii)]
	Group 1 for HCl/Cl_2 (> 6.8 Mg/yr/process)	any individual vent or any combination of vents	• reduce emission to ≤ 20 ppmv [§63.1362(b)(3)(ii)] • use the alternative standard [§63.1362(b)(6)]
		the collective emissions from all vents not controlled by [§63.1362(b)(3)(ii)] or [§63.1362(b)(6)]	• reduce HCl/Cl_2 emissions by ≥ 94 percent [§63.1362(b)(3)(ii)]

If you have a(n)..	And your process vents are…	Then, for..	Your compliance options are..[a]
new Source	Group 1 for organic HAP (> 0.15 Mg/yr/process)	any individual vent or any combination of vents	• reduce organic HAP emissions to ≤ 20 ppmv [§63.1362(b)(2)(iv)(A)] • use a flare that meets the requirements of §63.11(b) [§63.1362(b)(2)(iv)(B)] • use the alternative standard [§63.1362(b)(6)]
		the collective emissions from all vents not controlled by [§63.1362(b)(2)(iv)(A)], [§63.1362(b)(2)(iv)(B)], or [§63.1362(b)(6)]	• reduce organic HAP emissions by ≥ 98 percent [§63.1362(b)(2)(ii)]
	Group 1 for HCl/Cl_2 (> 6.8 Mg/yr/process and ≤ 191 Mg/yr/process)	any individual vent or any combination of vents	• reduce emission to ≤ 20 ppmv [§63.1362(b)(3)(ii)] • use the alternative standard [§63.1362(b)(6)]
		the collective emissions from all vents not controlled by [§63.1362(b)(3)(ii)] or [§63.1362(b)(6)]	• reduce HCl/Cl_2 emissions by ≥ 94 percent [§63.1362(b)(3)(ii)]
	Group 1 for HCl/Cl_2 (> 191 Mg/yr/process)	any individual vent or any combination of vents	• reduce emissions to ≤ 20 ppmv [§63.1362(b)(3)(ii)] • use the alternative standard [§63.1362(b)(6)]
		the collective emissions from all vents not controlled by [§63.1362(b)(3)(ii)] or [§63.1362(b)(6)]	• reduce HCL/Cl_2 emissions by ≥ 99 percent [§63.1362(b)(5)(iii)]

If you have a(n)..	And your process vents are…	Then, for..	Your compliance options are..[a]
new or existing source	a source of particulate matter emissions	the vent from each product dryer that drys a PAI or integral intermediate that is also a HAP	• reduce particulate matter emissions to ≤ 0.01 gr/dscf [§63.1362(e)(1)-(2)]
		the vent from each bag dump that is used to introduce a HAP solid to the process, excluding HAP present only as impurities	• reduce particulate matter emissions to ≤ 0.01 gr/dscf [§63.1362(e)(1)-(2)]
	Group 2 for organic HAP and/or HCl/Cl_2	the process	• no control required, but recordkeeping is required to demonstrate compliance with the 0.15 Mg/yr threshold for organic HAP emissions and the 6.8 Mg/yr threshold for HCl/Cl_2 emissions

[a] For each option, emissions must be routed from the process vent to the control device through a closed-vent system.

[b] Large vents meet both of the following conditions
- uncontrolled organic HAP emissions are > 22.68 Mg/yr (procedures to calculate uncontrolled emissions are specified in §63.1365(c)(2)
- "Low flow" emission stream [i.e., the flow-weighted average flow rate of the vent as calculated using equation 1 in §63.1362(b)(2)(ii) is less than or equal to the flow rate index calculated using equation 2 in §63.1362(b)(2)(ii)]

Compliance Options for **Storage Vessels**

Your storage vessel is at...	And has a capacity of…	And stores material with a maximum true vapor pressure of…	Your compliance options are[a]…
an existing source	≥ 75 m^3	≥ 3.45 kPa	• use a fixed roof tank with an internal floating roof [§63.1362(c)(2)(i)] • install an external floating roof [§63.1362(c)(2)(ii)] • convert your external floating roof to an internal floating roof [§63.1362(c)(2)(ii)] • vapor balance to a tank truck or railcar [§63.1362(c)(6)] • Use a control device that meets any of the following conditions [§63.1362(c)(2)(iv)] o Percent reduction [§63.1362(c)(2)(iv)(A)] o Reduce outlet concentration to ≤ 20 ppmv [§63.1362(c)(2)(iv)(B)] o A flare [§63.1362(c)(2)(iv)(C)] o Use one of the following as a control device [§63.1362(c)(2)(iv)(D)]: ▪ A boiler or process heater with a design heat input of 44 megawatts or greater ▪ A boiler or process heater into which the emission stream is introduced with the primary fuel ▪ An incinerator, boiler, or process heater that is permitted under RCRA o Use the alternative standard [§63.1362(c)(4)]
a new source	≥ 40 m^3	≥ 16.5 kPa	
	≥ 75 m^3	≥ 3.45 kPa	

[a] compliance options for storage vessels are the same for new and existing sources

Compliance Options for **Wastewater Systems**

Wastewater Tanks

If you own a(n)…	That meets any of the following	You have these compliance options
wastewater tank that receives, manages, or treats a Group 1 wastewater stream[a] or residual	• tank size ≥ 151 m^3 storing wastewater with maximum true vapor pressure ≥ 5.2 kPa • tank size ≥ 75 m^3 and < 151 m^3 storing wastewater with maximum true vapor pressure ≥ 13.1 kPa • tanks of any size storing any Group 1 wastewater stream or residual if the tank is used for any of the following: o heating wastewater o treating by means of an exothermic reaction o sparging	• use a fixed roof and control device [§63.133(a)(2)(i)] • use a fixed roof and an internal floating roof [§63.133(a)(2)(ii)] • use an external floating roof [§63.133(a)(2)(iii)] • use a fixed roof [§63.133(a)(1)]

[a] Group 1 wastewater streams are identified in either of the following ways: [§63.144(a)(1) and (2)]

- designate the streams as Group 1
- determine the wastewater stream flow rate and annual average concentration of Table 9 HAP
  - base concentration on any of the following in [§63.144(b)]
  - base flowrate on any of the following in [§63.144(c)]

Surface Impoundments

If you own a(n)…	You have these compliance options
surface impoundments that receives, manages, or treats a Group 1 wastewater stream or residual	• use a cover and control device [§63.134(b)(1)] • use a floating flexible membrane cover [§63.134(b)(2)]

Containers

Capacity of the container, m^3	If you treat wastewater in the container, must it remain open during treatment?	Compliance options
≥ 0.42	No	• use a cover and inspect for leaks [§63.135(b)(1), (b)(2)(ii), and (b)(3)]
	Yes	• use a cover and inspect for leaks [§63.135(b)(1), (b)(2)(ii), and (b)(3)]; **and** • use an enclosure [§63.135(d)]
< 0.42 (but > 0.1)	No	• use a cover and inspect for leaks [§63.135(b)(1), (b)(2)(ii), and (b)(3)] • use a cover on containers that meet Department of Transportation (DOT) specifications [§63.135(b)(2)(i) and (b)(3)]
	Yes	• use an enclosure [§63.135(d)]; **and either** • use a cover and inspect for leaks [§63.135(b)(1), (b)(2)(ii), and (b)(3)]; **or** • use a cover on containers that meet Department of Transportation (DOT) specifications [§63.135(b)(2)(i) and (b)(3)]

Individual Drain Systems

If you own a(n)…	You have these compliance options
individual drain system (IDS) that receives or manages Group 1 wastewater streams	• cover each opening [§63.136(b)] • use specified techniques for various parts of the drain system [§63.136(e)]

Oil-Water Separators

If you own a(n)…	You have these compliance options
oil-water separator that receives, manages, or treats a Group 1 wastewater streams	• use a fixed roof and control device [§63.137(a)(1)] • use a floating roof [§63.137(a)(2)] • use an equivalent means of reduction [§63.137(a)(3)]

Air Pollution Control Device

If you own a(n)…	You have these compliance options
air pollution control device that complies with an emission suppression compliance option for waste management units, including waste management units that are treatment units, that includes vented covers or enclosures	• percent reduction [§63.139(c)(1)(i), (2), (4), and (5)] • outlet concentration limit [§63.139(c)(1)(ii), (2), (4) and (5) and §63.1362(d)(13)][a] • specified enclosed combustion device [§63.139(b)(1)(iii)] • use a flare [§63.139(b)(3)] • specified exempted devices [§63.139(d)(4)]

[a] This option is not allowed for emissions from surface impoundments and containers if you use a noncombustion device.

Wastewater Streams

If you own a(n)…	You have these treatment[a] compliance options[b]
wastewater stream	• reduce outlet concentration to less than 50 ppmw [§63.138(b)(1)] • use a design steam stripper [§63.138(d)] • mass reduction [§63.138(e), (f), and (g)] • use a RCRA unit [§63.138(h)]

[a] Treatment units are techniques that remove or destroy the organics in a wastewater stream

[b] Compliance options may be used individually or in combination to achieve the required emission control

Equipment Leaks

If you own a(n)…	You have these compliance options
equipment "in organic HAP service"[a] • pumps • compressors • agitators • pressure relief devices • sampling connection devices • open-ended valves or lines • valves • connectors • instrumentation systems	• use a leak detection/repair program [§63.1363(b), (c), (d), and (e); and sections of Subpart H referenced from §63.1363(b)] • use enclosed equipment and transport emissions through a closed-vent system to a control device [§63.1363(b)(3)(ii), §63.172, and §63.179] • use pressure testing [§63.1363(b)(3)(iv), §63.178(b) • alternative monitoring for batch processes [§63.1363(b)(3)(iv), §63.178(c)] • alternative means of emission limitation [§63.1363(b)(2), §63.177]

[a] "In organic HAP service" means that the equipment component either contains or contacts a fluid that is at least 5 percent organic HAP by weight

This guide is a summary of the following two documents (both from EPA's toxic webpage).

Implementation Document	http://www.epa.gov/ttn/atw/pest/paimplement.pdf
Outreach and Training Materials	http://www.epa.gov/ttn/atw/pest/awma-dr-.pdf